

Atty. Docket No. ALPH.P010X

*PATENT*

**IN THE UNITED STATES PATENT OFFICE**

In Re Patent Application of:

Burnett et al.

Application No. Not yet assigned

Filed: September 18, 2003

For: VAD-BASED MULTIPLE-MICROPHONE  
ACOUSTIC NOISE SUPPRESSION

)  
)  
) Examiner: Not yet assigned

) Art Unit: Not yet assigned

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)  
) Assistant Commissioner for Patents  
Washington, D.C. 20231

**INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97**

Sir:

Enclosed is an Information Disclosure Citation Form PTO/SB/08 together with a copy of the references cited therein. It is respectfully requested that the cited references be considered and that the enclosed copy of the Form PTO/SB/08 be initialed by the Examiner to indicate such consideration and a copy thereof returned to applicant.

Pursuant to 37 CFR 1.97(h), the submission of this Information Disclosure Statement is not to be construed as an admission that the information cited in this statement is material to patentability.

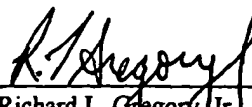
This Information Disclosure Statement is being submitted pursuant to 37 CFR 1.97(b)(3).

The Commissioner is hereby authorized to charge any fees which may be required in connection with this submission to Deposit Account No. 501914.

Respectfully submitted,

SHEMWELL GREGORY & COURTNEY LLP

Dated: September 18, 2003

  
\_\_\_\_\_  
Richard L. Gregory, Jr.  
Registration No. 42,607

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PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<b>C m p l t e if Known</b>	
				Application Number	To be assigned
				Filing Date	September 18, 2003
				First Named Inventor	Gregory C. Burnett
				Group Art Unit	To be assigned
				Examiner Name	To be assigned
				Attorney Docket Number	ALPH.P010X
Sheet	1	of	2		

U.S. PATENT DOCUMENT						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
LL		5,212,764		Ariyoshi	05-18-1993	
		5,400,409		Linhard	03-21, 1995	
		5,414,776		Sims, Jr.	05-09-1995	
		5,539,859		Robbe et al.	07-23-1996	
		5,633,935		Kanamori et al.	05-27-1997	
		5,835,608		Wanaka et al.	11-10-1998	
		5,917,921		Sasaki et al.	06-29-1999	
		6,000,396		Nagata	12-28-1999	
		6,191,724	B1	McEwan	02-20-2001	
		5,986,600		McEwan	11-16-1999	
		5,966,090		McEwan	10-12-1999	
		6,006,175		Holzrichter	12-21-1999	
		5,406,622		Silverberg et al.	04-11-1995	
		5,517,435		Sugiyama	05-14-1996	
		5,649,055		Gupta et al.	07-15-1997	
		6,266,422		Ikeda	07-24-2001	
		6,430,295		Handel et al.	08-06-2002	
		5,754,665		Hosoi	05-19-1998	
LL		5,473,702		Yoshida et al.	12-05-1995	

[illegible]

Examiner Signature	/Lun Lao/	Date Considered	01/31/2007
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

**Burden Hour Statement:** This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**

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PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0851-0031

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Substitute for form 1449B/PTO		<b>Compleat if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	To be assigned
		Filing Date	September 18, 2003
		First Named Inventor	Gregory C. Burnett
		Group Art Unit	To be assigned
		Examiner Name	To be assigned
		Attorney Docket Number	ALPH.P010X
Sheet	2	of	2

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
LL		ZHAO LI et al: "Robust Speech Coding Using Microphone Arrays", Signals Systems and Computers, 1997. Conf. record of 31st Asilomar Conf., Nov. 2-5, 1997, IEEE Comput. Soc. Nov. 2, 1997. USA.	
LL		L.C. NG et al.: "Denoising of Human Speech Using Combined Acoustic and EM Sensor Signal Processing", 2000 IEEE Intl Conf on Acoustics Speech and Signal Processing. Proceedings (Cat. No. 00CH37100), Istanbul, Turkey, June 5-9, 2000 XP002186255, ISBN 0-7803-6293-4	
LL		S. AFFES et al.: "A Signal Subspace Tracking Algorithm for Microphone Array Processing of Speech". IEEE Transactions on Speech and Audio Processing, N.Y, USA Vol. 5, No. 5, Sept. 1, 1997. XP000774303. ISBN 1063-6676	
LL		GREGORY C. BURNETT: "The Physiological Basis of Glottal Electromagnetic Micropower Sensors (GEMS) and Their Use in Defining an Excitation Function for the Human Vocal Tract", Dissertation. University of California at Davis. January. 1999. USA.	
LL		L.C. NG et al.: "Speaker Verification Using Combined Acoustic and EM Sensor Signal Processing", ICASSP-2001, Salt Lake City, USA.	
LL		A. HUSSAIN: "Intelligibility Assessment of a Multi-Band Speech Enhancement Scheme", Proceedings IEEE Intl. Conf. on Acoustics, Speech & Signal Processing (ICASSP-2000). Istanbul, Turkey. June 2000.	

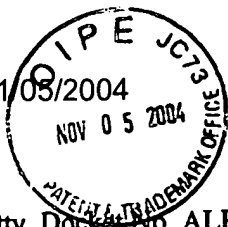
Examiner Signature	/Lun Lao/	Date Considered	01/31/2007
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<sup>1</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

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IDS - 11/08/2004



Atty. Docket No. ALPH.P010X

PATENT

**IN THE UNITED STATES PATENT OFFICE**

In Re Patent Application of:

Gregory C. Burnett

Application No. 10/667,207

Filed: September 18, 2003

For: VOICE ACTIVITY DETECTOR (VAD)-BASED )  
MULTIPLE MICROPHONE ACOUSTIC )  
NOISE SUPPRESSION )

Examiner: To be assigned

Art Unit: 1775

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR § 1.97**

Sir:

Enclosed is an Information Disclosure Citation Form PTO/SB/08. Also enclosed are copies of all references that are not U.S. Patent references. It is respectfully requested that all cited references be considered and that a copy of the enclosed Form PTO/SB/08 be initialed by the Examiner to indicate such consideration and a copy thereof returned to Applicant.

Pursuant to 37 CFR 1.97(h), the submission of this Information Disclosure Statement is not to be construed as an admission that the information cited in this statement is material to patentability.

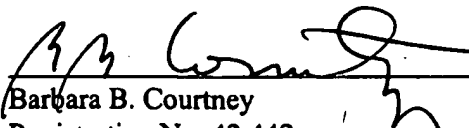
This Information Disclosure Statement is being submitted pursuant to 37 CFR 1.97(b)(3) before the mailing of a first office action on the merits.

The Commissioner is hereby authorized to charge any fees which may be required in connection with this submission to Deposit Account No. 501914.

Respectfully submitted,

SHEMWELL GREGORY & COURTNEY LLP

Dated: November 4, 2004

  
Barbara B. Courtney  
Registration No. 42,442



11/5/04

PTO/SB/08A (08-03)

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Substitute for form 1449/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 1

**Complete if Known**

Application Number	10/667,207
Filing Date	09/18/2003
First Named Inventor	Gregory C. Burnett
Art Unit	1775
Examiner Name	Not yet assigned
Attorney Docket Number	ALPH.P010X

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
LL ↑		US- 2002/039425 A1	04-04-2002	Burnett et al.	
		US- 3,789,166	01-29-1974	Sebesta	
		US- 4,006,318	02-01-1977	Sebesta et al.	
		US- 4,591,668	05-27-1986	Iwata	
		US- 4,901,354	02-13-1990	Gollmar et al.	
		US- 5,097,515	03-17-2002	Baba	
		US- 5,515,865	05-14-1996	Scanlon et al.	
		US- 5,684,460	11-04-1997	Scanlon et al.	
LL		US- 5,729,694	03-17-1998	Holzrichter et al.	
LL		US- 5,853,005	12-29-1998	Scanlon	
LL		US- 6,069,963	05-30-2000	Martin et al.	
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FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code* Number* Kind Code <sup>5</sup> (if known)				
LL ↓  ↓  ↓		EP 0 637 187 A ✓	02-01-1995	Pan Communicati		
		EP 0 795 851 A2 ✓	09-17-1997	Tokyo Shibaura		
		EP 0 984 660 A2 ✓	03-08-2000	Nippon T&T Corp		
		JP 2000 312 395 ✓	11-07-2000	Alpine Electron		
		JP 2001 189 987 ✓	07-10-2001	Pioneer Electro		
LL		WO 02 07151 ✓	01-24-2002	ALIPHCOM, Inc.		

Examiner  
Signature

/Lun Lao/

Date  
Considered

01/31/2007

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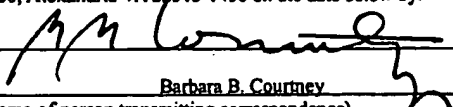
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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\_\_\_\_\_  
**Barbara B. Courtney**  
(Name of person transmitting correspondence)

\_\_\_\_\_  
**November 4, 2004**  
Date

Serial/Patent No.: 10/667,207 Filing/Issue Date: September 18, 2003 Client: ALIPH, Inc.  
Title: Voice Activity Detector (VAD)-Based Multiple Microphone Acoustic Noise Suppression

Atty. Docket No.: ALPH.P010X Date Mailed: November 4, 2004

The following has been received in the U.S. Patent & Trademark Office on the date stamped hereon:

- |   |   |
|---|---|
| <input type="checkbox"/> Amendment/Response ( pgs.)                         | <input type="checkbox"/> Petition for Extension of Time ( month(s))               |
| <input type="checkbox"/> Preliminary Amendment ( pgs.)                      | <input checked="" type="checkbox"/> Information Disclosure Statement & PTO/SB/08A |
| <input type="checkbox"/> Application - Utility ( pgs.)                      | <input checked="" type="checkbox"/> Information Disclosure Statement Transmittal  |
| <input type="checkbox"/> Application - Rule 1.53(b) Contin. ( pgs.)         | <input type="checkbox"/> Submission of Formal Drawings                            |
| <input type="checkbox"/> Application - Rule 1.53(b) Divis. ( pgs.)          | <input type="checkbox"/> Notice of Appeal   |
| <input type="checkbox"/> Application - Rule 1.53(b) CIP ( pgs.)             | <input type="checkbox"/> Appeal Brief ( pgs. in triplicate)                       |
| <input type="checkbox"/> Application - Rule 1.53(d) CPA ( pgs.)             | <input type="checkbox"/> Reply Brief  |
| <input type="checkbox"/> Application - PCT ( pgs.)                          | <input type="checkbox"/> Response to Notice of Missing Parts                      |
| <input type="checkbox"/> Application - Provisional ( pgs.)                  | <input type="checkbox"/> Utility Patent Application Transmittal                   |
| <input type="checkbox"/> Drawings ( sheets)                                 | <input type="checkbox"/> Fee Transmittal (in duplicate)                           |
| <input type="checkbox"/> Declaration & POA ( pgs.)                          | <input checked="" type="checkbox"/> Itemized Postcard                             |
| <input type="checkbox"/> Assignment & Cover Sheet ( pgs.)                   | <input checked="" type="checkbox"/> First Class Mail Certificate Of Mailing       |
| <input type="checkbox"/> Power of Attorney                                  | <input type="checkbox"/> Express Mail No. _____                                   |
| <input type="checkbox"/> Nonpublication Request (35 USC 122(b))             | <input type="checkbox"/> Check No. _____ Amt \$ _____                             |
| <input checked="" type="checkbox"/> Other <u>Seven (7) cited references</u> |   |